CLAIMS

What is claimed is:

1. A collection of networked apparatuses comprising:

a first plurality of apparatuses including first and second subsets wirelessly networked together, with each apparatus being equipped to communicate wirelessly in accordance with a first frequency hopping protocol, with the first and second subsets operating in accordance with a first and a second frequency hopping pattern based on a first and a second pseudo random pattern; and

a second plurality of apparatuses wirelessly networked together, with each apparatus being equipped to communicate wirelessly in accordance with a second protocol;

wherein said first and second subsets of said first plurality of apparatuses being operationally synchronized, and said second plurality of apparatuses being operated in a manner complementary to said synchronized operation of said first and second subsets of said first plurality of apparatuses, to proactively reduce interference between said first and second apparatuses.

2. The apparatus of claim 1, wherein said first and second subsets of said first plurality of apparatuses are operationally synchronized to a reference signal, and said second plurality of apparatuses are operationally aligned to the same reference signal, to effectuate said proactive reduction of interference between said first and second apparatuses.

3. The apparatuses of claim 1, wherein the collection of networked apparatuses further comprise

a multi-protocol apparatus equipped with a first and a second transceiver to communicate wirelessly with said first and second plurality of apparatuses in accordance with said first and second protocols respectively, and in a manner that is complementary to said synchronized operation of said first and second subsets of said first plurality of apparatuses to proactively reduce interference with said first and second plurality of apparatuses.

4. The apparatuses of claim 3, wherein

said first and second subsets are operationally synchronized to a reference signal, and said second plurality of apparatuses are operationally aligned to the same reference signal; and

said multi-protocol apparatus includes control logic to operate in a manner that is complementary to said synchronization as well as said alignment with respect to said reference signal, to effectuate said proactive reduction of interference among said apparatuses.

5. The apparatuses of claim 4, wherein said control logic includes logic to effectuate alignment to said reference signal incrementally.

6. The apparatuses of claim 4, wherein said control logic includes logic to effectuate said alignment to said reference signal incrementally, and in a selected one of at least a first and a second manner depending on an amount of misalignment with a transmission time slot.

7. The apparatuses of claim 6, wherein said logic decrements a transmission time slot starting time by a predetermined amount for m successive transmission time slots if the amount of misalignment is less than half of a transmission time slot size.

8. The apparatuses of claim 6, wherein said logic increments a transmission time slot starting time by a predetermined amount for n successive transmission time slots if the amount of misalignment is greater than half of a transmission time slot size.

9. An apparatus comprising:

a plurality of wireless transceivers to transmit and receive signals in accordance with a first and a second protocol, to and from first and second network devices of a first and a second wireless network communicatively coupled to the apparatus, the first network devices comprising first and second subsets that transmit and receive in accordance with a first and a second frequency hopping pattern based on a first and a second pseudo random pattern in a synchronized manner, the first protocol being a frequency hopping protocol; and

at least one controller manager coupled to the wireless transceivers to control and coordinate operation of said wireless transceivers in a manner that complements said synchronized operation of said first and second subsets of said first network devices to reduce interference among said apparatus and said first and second network devices.

10. The apparatus of claim 9, wherein the at least one controller manager includes logic to align transmit and receive operations of said wireless transceivers

to a reference signal against which said first and second subsets of said first network devices synchronize operations.

11. The apparatus of claim 10, wherein the at least one controller manager includes logic that effectuates said alignment to said reference signal incrementally.

12. The apparatus of claim 10, wherein said logic effectuates said alignment to said reference signal incrementally in a selected one of at least a first and a second manner depending on an amount of misalignment with a transmission time slot.

13. The apparatus of claim 12, wherein said logic decrements a transmission time slot starting time by a predetermined amount for m successive transmission time slots if the amount of misalignment is less than half of a transmission time slot size.

14. The apparatus of claim 12, wherein said logic increments a transmission time slot starting time by a predetermined amount for n successive transmission time slots if the amount of misalignment is greater than half of a transmission time slot size.

15. The apparatus of claim 9, wherein the first protocol is Bluetooth, and the second protocol is a protocol selected from a group consisting of 802.11 frequency hopping, 802.11 direct sequence, 802.11a, 802.11b, and Home RF.

16. The apparatus of claim 9, wherein the apparatus is a computer having a form factor selected from a group consisting of a desktop type, a notebook type and a palm sized type.

17. In an apparatus having a first and a second wireless transceiver, a method of operation comprising:

(a) controlling said first wireless transceiver to transmit and receive data to and from first and second subsets of first network devices of a first wireless network in accordance with a first protocol which is a frequency hopping protocol, and in a manner that is complementary to a synchronized manner of operation of the first and second subsets of said first network devices in accordance with first and second frequency hopping patterns based on first and second pseudo random patterns respectively; and

(b) controlling said second wireless transceiver to transmit and receive data to and from second network devices of a second wireless network in accordance with a second protocol, and in a manner that is complementary to an aligned manner of operation of said second network devices to said synchronous operation of the first and second subsets of said first network devices.

18. The method of claim 17, wherein said complementary manners of controlling comprise aligning transmit and receive operations of said first and second wireless transceivers to a reference signal against which said first and second subsets of said first network devices synchronize operations.

19. The method of claim 18, wherein said alignment to said reference signal is effectuated incrementally.

20. The method of claim 18, wherein said alignment to said reference signal is effectuated incrementally in a selected one of at least a first and a second manner depending on an amount of misalignment with a transmission time slot.

21. The method of claim 20, wherein said incremental alignment comprises decrementing a transmission time slot starting time by a predetermined amount for m successive transmission time slots if the amount of misalignment is less than half of a transmission time slot size.

22. The method of claim 20, wherein said incremental alignment comprises incrementing a transmission time slot starting time by a predetermined amount for n successive transmission time slots if the amount of misalignment is greater than half of a transmission time slot size.

23. A collection of networked apparatuses comprising:

a first plurality of apparatuses wirelessly networked together, with each apparatus being equipped to communicate wirelessly in accordance with a first frequency hopping protocol comprising a plurality of frequencies successively employed based on a pseudo random pattern;

a second plurality of apparatuses wirelessly networked together, with each apparatus being equipped to communicate wirelessly in accordance with a second protocol; and

a multi-protocol apparatus equipped to communicate wirelessly with said first and second plurality of apparatuses in accordance with said first and second protocols respectively, wherein the multi-protocol apparatus further at least

facilitates reduction of interference among said apparatuses, including at least facilitating prospective anticipation of whether interference will occur during transmission of a long packet by a selected one of said first network devices in accordance with said first protocol, said transmission of a long packet spanning multiple ones of said successive frequencies.

24. The collection of networked apparatuses of claim 23, wherein the multi-protocol apparatus includes a network manager equipped to determine the pseudo random frequency hopping pattern of said first network devices of said first wireless network.

25. The collection of networked apparatuses of claim 24, wherein the network manager is further equipped to predict when interference will occur between said first and second network devices of said first and second wireless networks, based on said determined pseudo random frequency hopping pattern.

26. The collection of networked apparatuses of claim 25, wherein the network manager is further equipped to provide said first/second network devices with collision maps.

27. The collection of networked apparatuses of claim 25, wherein the network manager is further equipped to inform said first/second network devices of anticipated interference.

28. An apparatus comprising:

at least one wireless transceiver to transmit and receive signals in accordance with a first and a second protocol to and from first and second network devices of a first and a second wireless network respectively, said first protocol being a frequency hopping protocol comprising a plurality of frequencies successively employed in accordance with a pseudo random pattern; and

at least one controller manager coupled to the at least one wireless transceiver to control and coordinate performance of said transmits and receives, including at least facilitation of proactive reduction of interference among said apparatus and said network devices, by at least facilitating prospective anticipation of whether interference will occur during transmission of a long packet by a selected one of said first network devices in accordance with said first protocol, said transmission of a long packet spanning multiple ones of said successive frequencies.

29. The apparatus of claim 28, wherein the apparatus further includes a network manager equipped to determine the pseudo random frequency hopping pattern of said first network devices of said first wireless network.

30. The apparatus of claim 29, wherein the network manager includes logic to predict when interference will occur between said first and second network devices of said first and second wireless networks, based on said determined pseudo random frequency hopping pattern.

31. The apparatus of claim 30, wherein the network manager is further equipped to provide said first/second network devices with collision maps.

32. The apparatus of claim 30, wherein the network manager is further equipped to inform said first/second network devices of anticipated interference.

33. The apparatus of claim 28, wherein the first protocol is Bluetooth, and the second protocol is a protocol selected from a group consisting of 802.11 frequency hopping, 802.11 direct sequence, 802.11a, 802.11b, and Home RF.

34. The apparatus of claim 28, wherein the apparatus is a computer having a form factor selected from a group consisting of a desktop type, a notebook type and a palm sized type.

35. In an apparatus having at least one wireless transceiver and at least one controller manager; a method of operation comprising:

controlling said at least one wireless transceiver to transmit and receive signals in accordance with a first and a second protocol to and from first and second network devices of a first and a second wireless network respectively, said first protocol being a frequency hopping protocol comprising a plurality of frequencies successively employed in accordance with a pseudo random pattern; and

at least facilitating proactive reduction of interference among said apparatus and said network devices, by at least facilitating prospective anticipation of whether interference will occur during transmission of a long packet by a selected one of said first network devices in accordance with said first protocol, said transmission of a long packet spanning multiple ones of said successive frequencies.

36. The method of claim 35, wherein said at least facilitating includes determining the pseudo random frequency hopping pattern of said first network devices of said first wireless network.

37. The method of claim 36, wherein said at least facilitating further includes predicting when interference will occur between said first and second network devices of said first and second wireless networks, based on said determined pseudo random frequency hopping pattern.

38. The method of claim 37, wherein said at least facilitating further comprises providing said first/second network devices with collision maps.

39. The method of claim 37, wherein said at least facilitating further comprises informing said first/second network devices of anticipated interference.